Amendments to the Claims:
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended)A method for up-interpolating a Bayer mosaic image from input space to output space, said Bayer mosaic image input space comprising a plurality of four-pixel blocks, each pixel in said blocks being one of three different colors with ~~one of~~ two of said four pixels in each block being a dominant color and the other two of said four pixels being non-dominant colors, said method including the steps of:
reading a two dimensional color plane of said Bayer image for each said color;
mapping said pixels of said dominant color from said input space to said output space by:
multiplying each coordinate of said input space by $1/\sqrt{2}$; and
scaling coordinates of said input space to a normalized coefficient kernel by multiplying said coordinates by $1/\sqrt{2}$;
mapping said pixels of said non-dominant colors by multiplying each ~~ordinate~~coordinate ——of said input space by 1/2;
for each color, convolving said input space pixels with a coefficient kernel for each color; and
writing ~~said~~ all mapped pixels to a storage location.
2. (Original)The method of claim 1 wherein said three different colors are red, green and blue.
3. (Original)The method of claim 1 or 2 wherein said dominant color is green.
4. (Original)The method of claim 1 wherein said coefficient kernel is the same for said two non-dominant colors but different for said dominant color.
5. (Currently amended)The method of claim 1 wherein~~, for said dominant color,~~ said mapping step for said dominant color further includes sampling a 4x4 pixel block.
6. (Currently amended)An apparatus for up-interpolating a Bayer mosaic image from input space pixel values to output space pixel values, said Bayer mosaic image comprising a plurality of four-pixel blocks, each pixel in said blocks being one of three different colors with ~~one of~~ two of said four pixels in each block being a dominant color and the other two of said four pixels being non-dominant colors, said apparatus comprising:
an input buffer for each color for storing said input space pixel values;

a coefficient kernel for each color, said coefficient kernel for said dominant color being normalized;

processing means configured for :

mapping said pixels of said dominant color from said input space to said output space by multiplying each coordinate of said input space by $1/\sqrt{2}$;

scaling coordinates of said input space to a normalized coefficient kernel by multiplying said coordinates by $1/\sqrt{2}$; and

mapping said pixels of said non-dominant colors by multiplying each coordinate of said input space by 1/2;

a convolve unit for each color for convolving said input space pixel values with said kernel coefficients of each color; and

an output buffer for storing mapped pixel values.

7. (Original)The apparatus of claim 6 further comprising processing means for sampling a 4x4 pixel block for said dominant color.

8. (Currently amended)A method of interpolating a Bayer image of red, green and blue pixels from an input space to an output space, the method including the steps of:

receiving the Bayer image; and

mapping each of the input space colors to the output space in accordance with the following equations:

$$x' = (x/ops) + k_1$$

$$y' = (y/ops) + k_2$$

where x,y is a coordinate in the output space, x'y' is the coordinate in the input space, ops is the number of pixels in the output space per input space sample, and $k_{1,2}$ are either 0 or-0.5 depending on the color and ~~the~~ a desired relative rotational orientation of the image.

9. (Currently amended)The method of claim 8 wherein, for the green pixels in the input space, each ~~ordinate~~coordinate of the input space is multiplied by $1/\sqrt{2}$.

10. (Original)The method of claim 8 wherein, for the green pixels in the input space, each coordinate of the input space is multiplied by $1/\sqrt{2}$.

11. (Currently amended)A method of sampling a Bayer image having two dimensional planes of red, green and blue pixels, the method including the steps of:

rotating the green plane by 45°;

sequentially sampling an m x m pixel block of the rotated plane, where m is an integer greater than 1;

providing ~~an~~ addresses for the m^2 samples by determining a starting address for a first of the samples and thereafter applying a predetermined fixed sequence of offsets to obtain the addresses of the remaining samples.

12. (Currently amended)The method of claim 11 wherein the step of determining the starting address is responsive to ~~the~~ a relative rotational orientation of the image.

13. (Original)The method of claim 11 wherein m=4 and there are sixteen offsets.

14. (Currently amended)An apparatus for sampling a Bayer image having two dimensional planes of red, green and blue pixels, the apparatus comprising:

input means for rotating the green plane by 45°;

processing means for sequentially sampling an m x m pixel block of the rotated plane, where m is an integer greater than 1;

address means for providing ~~an~~ addresses for the m^2 samples by determining a starting address for a first of the samples and thereafter applying a predetermined fixed sequence of offsets to obtain the addresses of the remaining samples.